

Appl. No. 10/531,267
Amdt. dated January 23, 2008
Reply to Office action of August 23, 2007

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-25. (Canceled)

26. (New) A gear pump, comprising:

a housing (10, 12) encompassing a pump chamber (14);

two rotating gear wheels (16, 18) disposed in the pump chamber (14) of the housing (10, 12), the two gear wheels made of sintered steel;

bearing means disposed in the pump chamber (14) of the housing and supporting the two rotating gear wheels, the bearing means embodied by at least one bearing part (13, 21, 23, 24, 26) of the housing, wherein the housing is comprised of a lightweight aluminum or an aluminum alloy, and wherein the at least one bearing part (13, 21, 23, 24, 26) of the housing is provided with a coating (50) of a nickel alloy, which surface of the coating (50) has a substantially plane microstructure.

27. (New) The gear pump of claim 26, wherein the coating (50) comprises a nickel-phosphorus alloy.

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28. (New) The gear pump of claim 26, wherein the coating (50) is hardness-enhanced by tempering.

29. (New) The gear pump of claim 27, wherein the coating (50) is hardness-enhanced by tempering.

30. (New) The gear pump of claim 26, wherein the at least one bearing part of the housing (10) has at least one bearing journal (24, 26), on which at least one of the gear wheels (16, 18) is radially supported; and wherein at least the at least one journal (24, 26) is provided on its surface with the coating (50).

31. (New) The gear pump of claim 27, wherein the at least one bearing part of the housing (10) has at least one bearing journal (24, 26), on which at least one of the gear wheels (16, 18) is radially supported; and wherein at least the at least one journal (24, 26) is provided on its surface with the coating (50).

32. (New) The gear pump of claim 28, wherein the at least one bearing part of the housing (10) has at least one bearing journal (24, 26), on which at least one of the gear wheels (16, 18) is radially supported; and wherein at least the at least one journal (24, 26) is provided on its surface with the coating (50).

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33. (New) The gear pump of claim 26, wherein the at least one bearing part of the housing (10, 12) has a wall (21, 23; 15) disposed approximately perpendicularly to a pivot axis (25, 27) of at least one of the gear wheels (16, 18), and which forms an axial bearing of at least one of the gear wheels (16, 18); and wherein the wall (21, 23; 15) is provided with the coating (50).

34. (New) The gear pump of claim 27, wherein the at least one bearing part of the housing (10, 12) has a wall (21, 23; 15) disposed approximately perpendicularly to a pivot axis (25, 27) of the at least one of the gear wheels (16, 18), and which forms an axial bearing of the at least one of the gear wheels (16, 18); and wherein the wall (21, 23; 15) is provided with the coating (50).

35. (New) The gear pump of claim 28, wherein the at least one bearing part of the housing (10, 12) has a wall (21, 23; 15) disposed approximately perpendicularly to a pivot axis (25, 27) of the at least one of the gear wheels (16, 18), and which forms an axial bearing of the at least one of the gear wheels (16, 18); and wherein the wall (21, 23; 15) is provided with the coating (50).

36. (New) The gear pump of claim 30, wherein the at least one bearing part of the housing (10, 12) has a wall (21, 23; 15) disposed approximately perpendicularly to a pivot axis (25, 27) of the at least one of the gear wheels (16, 18), and which forms an axial bearing of the at

least one of the gear wheels (16, 18); and wherein the wall (21, 23; 15) is provided with the coating (50).

37. (New) A gear pump, comprising:

a housing (10, 12);

two rotating gear wheels (16, 18) disposed in the housing (10, 12), the two gear wheels made of sintered steel;

bearing means disposed in the housing and supporting the two rotating gear wheels, the bearing means embodied by at least one bearing part (13, 21, 23, 24, 26) of the housing, wherein the housing is comprised of a lightweight aluminum or an aluminum alloy, and wherein the at least one bearing part (13, 21, 23, 24, 26) of the housing is provided with a coating (50) of a nickel alloy, which surface of the coating (50) has a substantially plane microstructure.

38. (New) The gear pump of claim 37, wherein the coating (50) comprises a nickel-phosphorus alloy.

39. (New) The gear pump of claim 37, wherein the at least one bearing part of the housing (10) has at least one bearing journal (24, 26), on which at least one of the gear wheels (16, 18) is radially supported; and wherein at least the at least one journal (24, 26) is provided on its surface with the coating (50).

40. (New) The gear pump of claim 38, wherein the at least one bearing part of the housing (10) has at least one bearing journal (24, 26), on which at least one of the gear wheels (16, 18) is radially supported; and wherein at least the at least one journal (24, 26) is provided on its surface with the coating (50).

41. (New) The gear pump of claim 37, wherein the at least one bearing part of the housing (10, 12) has a wall (21, 23; 15) disposed approximately perpendicularly to a pivot axis (25, 27) of at least one of the gear wheels (16, 18), and which forms an axial bearing of at least one of the gear wheels (16, 18); and wherein the wall (21, 23; 15) is provided with the coating (50).

42. (New) The gear pump of claim 38, wherein the at least one bearing part of the housing (10, 12) has a wall (21, 23; 15) disposed approximately perpendicularly to a pivot axis (25, 27) of the at least one of the gear wheels (16, 18), and which forms an axial bearing of the at least one of the gear wheels (16, 18); and wherein the wall (21, 23; 15) is provided with the coating (50).

43. (New) The gear pump of claim 39, wherein the at least one bearing part of the housing (10, 12) has a wall (21, 23; 15) disposed approximately perpendicularly to a pivot axis (25, 27) of the at least one of the gear wheels (16, 18), and which forms an axial bearing of the at least one of the gear wheels (16, 18); and wherein the wall (21, 23; 15) is provided with the coating (50).